



Climate impact on suicide rates in Finland from 1971 to 2003

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Abstract:

Seasonal patterns of death from suicide are well-documented and have been attributed to climatic factors such as solar radiation and ambient temperature. However, studies on the impact of weather and climate on suicide are not consistent, and conflicting data have been reported. In this study, we performed a correlation analysis between nationwide suicide rates and weather variables in Finland during the period 1971-2003. The weather parameters studied were global solar radiation, temperature and precipitation, and a range of time spans from 1 month to 1 year were used in order to elucidate the dose-response relationship, if any, between weather variables and suicide. Single and multiple linear regression models show weak associations using 1-month and 3-month time spans, but robust associations using a 12-month time span. Cumulative global solar radiation had the best explanatory power, while average temperature and cumulative precipitation had only a minor impact on suicide rates. Our results demonstrate that winters with low global radiation may increase the risk of suicide. The best correlation found was for the 5-month period from November to March; the inter-annual variability in the cumulative global radiation for that period explained 40 % of the variation in the male suicide rate and 14 % of the variation in the female suicide rate, both at a statistically significant level. Long-term variations in global radiation may also explain, in part, the observed increasing trend in the suicide rate until 1990 and the decreasing trend since then in Finland.

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Resource Description

Early Warning System:

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure :

weather or climate related pathway by which climate change affects health

Precipitation, Solar Radiation, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Climate Change and Human Health Literature Portal

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Finland

Health Impact:

specification of health effect or disease related to climate change exposure

Injury, Mental Health/Stress

Mental Health Effect/Stress: Mood Disorder

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Outcome Change Prediction

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Short-Term (

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content